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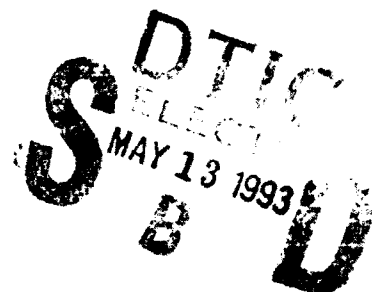
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NAVAL WAR COLLEGE  
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TACTICAL NUCLEAR WEAPONS IN THE POST COLD WAR ERA:  
IMPLICATIONS FOR THE OPERATIONAL COMMANDER

by

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A paper submitted to the Faculty of the Naval War College in partial satisfaction of the requirements of the Department of Operations.

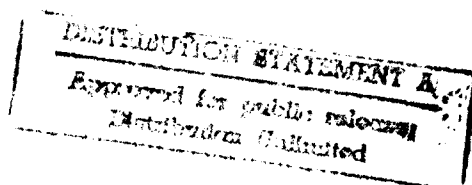
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IMPLICATIONS FOR THE OPERATIONAL COMMANDER

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TACTICAL NUCLEAR WEAPONS IN THE POST COLD WAR ERA:

IMPLICATIONS FOR THE OPERATIONAL COMMANDER

CHAPTER I

INTRODUCTION

In September 1991, President Bush was praised by the international community for his decision to destroy all land-based tactical nuclear weapons and remove tactical nuclear warheads from surface ships and attack submarines. While the President's decision offers new hope in arms control, the proliferation of nuclear weapons technology poses a tremendous threat to our national interests, friends, and allies around the world. The Commander in Chiefs (CINCs) of combatant commands must retain a substrategic nuclear capability until substantial improvements are made in our anti-tactical missile defense systems (ATMDS).

Many politicians, defense analysts, and scholars challenge the need for tactical nuclear weapons in the new world order. Before the collapse of the Soviet Union, President Gorbachev responded to President Bush's September commitment by announcing a similar pledge to eliminate or reduce a wide range of air, land, and sea-based tactical nuclear weapons. The former Soviet republics are complying with the Gorbachev

proposals, making the possibility of a nuclear confrontation with the Commonwealth republics more remote than ever.<sup>1</sup>

At first glance, the retention of a substrategic nuclear capability appears to be an outdated strategy and a waste of public funds. Critics of deterrence argue that disarmament is a more effective means of enhancing regional and global security. When viewed strictly in the context of East-West relations, this assertion is true. However, the proliferation of nuclear weapons beyond the borders of the former Soviet Union reveals that non-proliferation and disarmament agreements will be difficult to achieve with some developing nations. Several countries, particularly in the Middle East and Asia, are making or trying to make nuclear weapons to deter or threaten potential adversaries. If this trend continues, changes in military balances may precipitate hostilities or instability in several parts of the world. Regional CINCs or Combatant Commanders need a substrategic nuclear capability in the near term to deter aggression and nuclear blackmail in their respective areas of responsibility (AORs). Once an effective ATMDS is fielded, our national policy toward tactical nuclear weapons can shift in a direction where deterrence is based on conventional strength, missile defense capabilities, and arms control or disarmament agreements.

## CHAPTER II

### THE THREAT OF NUCLEAR PROLIFERATION

The disintegration of the Soviet Union, reports from the United Nations about Iraq's nuclear program, and North Korea's refusal to permit inspections of its nuclear facilities are recent events which have generated international concern about the proliferation of nuclear weapons and nuclear technology.

The United States, France, the United Kingdom, the Commonwealth of Independent States (CIS), and Peoples Republic of China are the only nations which acknowledge possession of nuclear weapons; however, considerable evidence exists that Israel, India, and Pakistan have extensive nuclear weapon programs.<sup>1</sup> Furthermore, the U.S. Army's Chemical School recently reported that as many as 13 Third World nations will be technologically capable of producing nuclear weapons in the near future.<sup>2</sup>

Current economic conditions in the former Soviet Union have raised fears that Commonwealth republics desperate for hard currency may sell nuclear weapons, nuclear components, or fissionable material on the black market. Additional concerns center around the employment of "1000 to 2000 nuclear experts in the Commonwealth states who have the skill to design nuclear

weapons".<sup>3</sup> In a recent article in Arms Control Today, William C. Potter notes that "Brazil, India, Iraq, Libya, and Pakistan are actively pursuing scientists from the former Soviet Union, and that 19 Soviet nuclear scientists have emigrated to Israel this past year".<sup>4</sup>

Projections about nuclear proliferation are often dismissed as wild conjecture to "hype" the threat and justify high levels of defense spending.<sup>5</sup> Proponents of this view frequently argue that proliferation forecasts ignore the safeguards imposed by the nuclear powers and international organizations. The Nuclear Non-proliferation Treaty (NPT), inspections by the International Atomic Energy Agency (IAEA), and nuclear export controls are some of the mechanisms used by the international community to curb the spread of nuclear arms. A study by Thomas Millar identifies cost, infrastructure, delivery systems, and domestic or international opposition as the major constraints which will prevent most Third World countries from acquiring nuclear weapons.<sup>6</sup>

While the pace of nuclear proliferation has been tempered by the international system of nonproliferation and the inherent constraints associated with the development of a nuclear weapons capability, revelations about Saddam Hussein's "Manhattan Project" is a painful reminder of how a signatory of



the NPT can circumvent international agreements and export controls. Iraq's clandestine nuclear weapons program has fueled speculation about North Korea's nuclear activities.

In testimony before House Committees and Senate panels, CIA Director, Robert Gates said, "North Korea is hiding parts of its nuclear weapons program despite pledges to join with South Korea in making the peninsula nuclear-free and . . . at some point might sell nuclear materials and related technologies abroad".<sup>7</sup>

The ripple effects of nuclear proliferation present many challenges to Regional CINCs. First and foremost is the tension and instability created by changes in military balances. Regional powers may respond with force against potential or real nuclear threats [i.e., Israel's raid on the Osirak nuclear reactor near Baghdad in 1981]. Second, nuclear proliferation can undermine arms control and collective security agreements. Third, allies may pursue a nuclear weapons program if the United States does not guarantee their security from nuclear threats. Fourth, nuclear proliferation can limit or complicate the response options of a CINC by raising the cost of military intervention. Finally, renegade or despotic nations armed with nuclear weapons may undermine U.S. or Allied interests by intimidating weaker states.

Theater CINCs employ political, economic, and military measures to promote regional stability and deter nuclear proliferation. While each measure is characterized by different actions, the goals of each activity are complementary. Political measures include such things as arms control or disarmament agreements, diplomatic pressures [i.e., U.N. resolutions condemning violations of the NPT], and cooperative security arrangements [i.e., nuclear - weapons - free zones]. Economic assistance can be used as an incentive to encourage nations to remain nuclear free and economic sanctions are usually effective against countries that violate the NPT or refuse IAEA inspections. A "carrot and stick" approach is also applicable to the use of military power. CINCs can provide military assistance and a nuclear security blanket to allies or employ force against the nuclear facilities of potential adversaries.

CHAPTER III  
DETERRENCE THEORY AND THE ROLE OF  
TACTICAL NUCLEAR WEAPONS

Nuclear proliferation will continue to be a challenge for Theater CINCs, because many countries are trying to acquire nuclear weapons for the same reason America has for maintaining them -- deterrence. Deterrence is a security concept which is typically defined as a defensive posture which "dissuades potential adversaries from initiating war by threatening the use of force".<sup>1</sup> Deterrence theorists recognize two types of deterrence: deterrence by denial and deterrence by punishment. Deterrence by denial is based on the premise that rational decision makers would not initiate a war if they could not achieve their objectives by force<sup>2</sup> [The threat of nuclear force convinces the aggressor that he will be denied military success if he attacks]. Deterrence by punishment emphasizes psychological factors, "such as fear of punishment"<sup>3</sup> [The aggressor does not initiate a war because he fears nuclear retaliation, rather than denial of military success].

Credibility is a central element in both types of deterrence.<sup>4</sup> If the threat to use force is not considered credible, deterrence fails. David Tarr's recent work on

deterrence theory outlines three criteria of credibility: capability, cost, and national will.<sup>5</sup> According to Tarr, "a nation must have the means to retaliate; the cost to be inflicted must far exceed any gains the enemy might otherwise hope to obtain; and the national will to respond must be evident to the attacker".<sup>6</sup>

The deployment of tactical nuclear weapons to Europe supported NATO's strategy of flexible response. These weapons provided a wide range of nuclear options to counter a nuclear or overwhelming conventional attack by the Warsaw Pact. Furthermore, tactical nuclear weapons permitted escalation of nuclear conflict and minimized the possibility of massive retaliation at the strategic level.

Our threat to use nuclear weapons for defense or retaliation was perceived as credible by the Soviets, because we consistently demonstrated our willingness to use nuclear force. This determination was expressed in multilateral security agreements [i.e., The North Atlantic Treaty], nuclear weapons employment doctrine, and public support for nuclear deterrent strategies.<sup>7</sup>

In the post Cold War era, the number of tactical nuclear weapons and delivery systems have diminished. However, Theater CINCs can still deliver substrategic nuclear weapons with dual

purpose aircraft [i.e., aircraft capable of delivering conventional or nuclear munitions]. Thus, tactical nuclear weapons will continue to have a deterrent role in America's nuclear strategy in the near term.

Opponents of deterrence argue that tactical nuclear weapons have lost their deterrent value because the former Warsaw Pact countries have embraced democratic principles and no longer pose a threat to our national security. Other arguments center around instability and the arms races deterrence seems to perpetuate. Israel's acquisition of a nuclear weapons capability is often cited as the primary reason many Arab states seek or acquire ballistic missiles and weapons of mass destruction<sup>8</sup> [i.e., nuclear, biological, or chemical (NBC) weapons].

Honoré Catudal, author of Nuclear Deterrence: Does it Deter?, provides a detailed analysis of how deterrent postures can incite fear among neighboring states and provoke hostilities. Catudal questions the underlying assumption of deterrence theory [i.e., national leaders will act rationally when making decisions] and makes the point that war is usually a consequence of irrational behavior.<sup>9</sup> Catudal's arguments highlight some of the ambiguities in deterrent strategies, but

he fails to identify a single instance where nuclear deterrence has failed.

In the aftermath of the Gulf War, a growing number of defense analysts seem to think our conventional forces are strong enough to deter nuclear aggression. This argument has some merit, but it fails to address the vulnerability of our forces to NBC strikes. A desperate adversary may rely on weapons of mass destruction to neutralize our superior conventional forces.

The debate over tactical nuclear weapons will continue as long as these weapons exist. Despite some of the negative aspects of nuclear weapons, America's nuclear deterrent strategy has served the nation well for over forty years. Nuclear weapons forced the superpowers to coexist and avoid war because national survival was at stake.<sup>10</sup> The political environment in the Commonwealth republics is changing and our NATO allies are seeking new security arrangements which are less dependent on nuclear deterrence. This attitude is probably appropriate given the radical changes in East-West relations over the last two years, but this attitude is not shared with some of our closest allies outside of Europe.

In September 1991, The New York Times reported that South Korea expressed "quiet misgivings" over President Bush's

decision to remove land and sea-based tactical nuclear weapons from the peninsula.<sup>11</sup> From an American point of view, a change in our nuclear posture was not detrimental to South Korea's national security, because North Korea is no longer operating under the nuclear umbrella of the former Soviet Union. South Korea's perceived insecurity comes from a long held belief that land and sea-based tactical nuclear weapons were necessary to deter an aggressive North Korea. Reductions in the number of nuclear weapons or delivery systems were bound to create some anxiety in South Korea and raise questions about America's commitment in the region.

Israel has acquired a nuclear weapons capability despite billions of dollars in military aid and America's efforts to maintain peace in the region. Clearly, the Israeli's believe that nuclear weapons have a deterrent value that can never be achieved with conventional forces.

Nuclear weapons are deeply rooted in America's security framework and in the security framework of our allies. Gradual reductions in our tactical nuclear arsenal are appropriate in the new strategic environment, but total elimination of these weapons would be reckless and premature. Tactical nuclear weapons have a deterrent role in regional stability, but they also provide CINCs with a rarely discussed warfighting

capability. Whether we ever use this capability is a matter of debate, but as long as we have tactical nuclear weapons in our force structure, they should be considered as a military option.



## CHAPTER IV

### TACTICAL NUCLEAR WEAPONS AS A WARFIGHTING CAPABILITY

The primary purpose of our nuclear arsenal is to deter aggression.<sup>1</sup> If deterrence fails, tactical nuclear weapons provide Theater CINCs a powerful defensive or retaliatory capability. With approval from the National Command Authority (NCA), a CINC may employ tactical nuclear weapons in a defensive role to: (1) preempt a nuclear, biological, or chemical strike; (2) reverse a deteriorating military situation where a substantial number of American or allied forces face annihilation; or (3) terminate a conflict quickly to reduce the number of American or allied casualties which would otherwise occur if hostilities continued.<sup>2</sup> Tactical nuclear weapons may also be used in a retaliatory role if an adversary initiates NBC warfare.

President Bush's September 1991 initiative to reduce our arsenal of tactical nuclear weapons left the Theater CINCs with a less flexible and less survivable nuclear force. Furthermore, the President's decision eliminated a CINC's ability to cross target [i.e., employ several different platforms (land, sea, or air) against a target to ensure the desired level of damage is achieved].<sup>3</sup>

Aircraft such as the F-111, F-16, and F-15E are the only theater-based tactical nuclear delivery systems. These weapon systems lack a stand-off launch capability and are; therefore, vulnerable to adverse weather, offensive countermeasures, and high intensity air defense systems.<sup>4</sup> Despite these limitations, the Combatant Commanders need to retain a tactical nuclear weapons capability.

Because of the improved accuracy and destructive power of precision guided munitions, there is a growing perception that tactical nuclear weapons are no longer needed. Moreover, many strategists can't imagine any threat or battlefield condition which would justify the use of tactical nuclear weapons. They argue that tactical nuclear weapons are political instruments with no battlefield utility and that America's superior technology and conventional strength can counter any threat -- nuclear or non-nuclear.<sup>5</sup>

Lieutenant General A. S. Collins, U.S. Army (retired) offers a similar argument in his article, "Tactical Nuclear Weapons: Are They a Real Option?". He points out some of the potential difficulties friendly forces will encounter in a nuclear environment: inability to maneuver because of debris and tree blowdown; collateral damage and displaced indigenous populations; the impact of electromagnetic pulse on unprotected

electronic devices; and radiation sickness.<sup>6</sup> Collins also suggest that no President or coalition partner would ever approve the use of nuclear weapons against a non-nuclear state.<sup>7</sup>

The negative political and international consequences associated with the employment of nuclear weapons are quite apparent; nevertheless, most military planners acknowledge the decisive power of these weapons in combat operations. Throughout the Cold War, Soviet military doctrine emphasized the use of nuclear fires to achieve surprise and maintain the initiative.<sup>8</sup> Admiral William Crowe, former Chairman of the Joint Chiefs of Staff, supports an international ban on naval tactical nuclear weapons, because he recognizes the fact that an adversary armed with tactical nuclear weapons can inflict significant damage against our surface fleets.<sup>9</sup>

Tactical nuclear weapons may be employed against the same targets as conventional weapons: nuclear and non-nuclear forces; command, control, and communications facilities; and logistical support or transportation centers. However, nuclear weapons are unique because of their lethality and psychological impact.

Some of our conventional munitions can produce the same level of damage as low yield tactical nuclear weapons, but

conventional weapons can't match the destructive power of higher yield nuclear weapons. Tactical nuclear weapons are effective against hard targets [i.e., concrete and underground fortifications] and soft targets [i.e., wheeled vehicles and unprotected troops], whereas conventional weapons may not be effective against some hardened bunkers.

A nuclear explosion can produce psychological effects among survivors that conventional weapons may not achieve. Nuclear weapons can shock, demoralize, and destroy an enemy's will to resist [i.e., Japan's response to the atomic bombs dropped over Hiroshima and Nagasaki].

Nations may acquire nuclear weapons for many reasons: international prestige, regional influence, or deterrence, but these weapons are also valuable military assets which enhance the warfighting capability of conventional forces. It's in America's best interest to maintain substrategic nuclear weapons until improvements are made in our anti-missile defense capabilities. We will never make nuclear weapons obsolete, but an improved ATMDS may strengthen deterrence and reduce our vulnerability to nuclear strikes in regional conflicts.

## CHAPTER V

### THE NEED FOR A BETTER ANTI-TACTICAL

#### MISSILE DEFENSE SYSTEM

During the Gulf War, initial reports on the Patriot air defense system led many politicians, military leaders, coalition partners, and the public, in general, to believe the system was nearly flawless.<sup>1</sup> After the war, several sources confirmed the initial reports and indicated Patriot missiles intercepted 45 of the 47 SCUDs that were engaged.<sup>2</sup>

Representative John Conyers, Chairman of the House Government Operations Subcommittee on Legislation and National Security, recently accused several White House officials, General Norman Schwarzkopf, and Raytheon Inc. [primary contractor for Patriot] of making false claims about the effectiveness of the Patriot during the Gulf War.<sup>3</sup> Conyers contends that many of the reported interceptions were the result of computer errors.<sup>4</sup> A September 1992 report by the General Accounting Office "found that only nine percent of the Patriot-SCUD engagements" can be verified.<sup>5</sup> The Army has revised its initial assessment of the Patriot and reported that, "Patriots successfully intercepted 70% of the SCUDs fired at Saudi Arabia and 40% of the SCUDs fired at Israel".<sup>6</sup>

Theodore Postol's article, "The Gulf War Experience With Patriot," supports the findings of Representative Conyers and the General Accounting Office. According to Postol, ". . . our first wartime experience with tactical ballistic missile defense resulted in what may well be a nearly total failure to intercept quite primitive attacking missiles. . .".<sup>7</sup>

Discrepancies about the true performance of the Patriot during the Gulf War underscores our need for an improved anti-tactical missile defense system (ATMDS). Theater CINCs need a better ATMDS, because forces responding to a regional crisis are vulnerable to ballistic missiles armed with NBC warheads. The CINCs are relying on tactical nuclear weapons to deter NBC aggression, but deterrence may be less effective against emerging Third World threats.

The old bipolar [U.S. - USSR] model of deterrence was based on a long standing adversarial relationship where the two opponents understood each other's history, goals, and values.<sup>8</sup> The behavior of leaders like Mu'ammar Qaddafi and Saddam Hussein is often construed as irrational by Western observers and deterrence usually fails when adversaries don't understand each other and the type of deterrent strategies that will work effectively. This is not to suggest deterrence is no longer

important in our security framework, it simply means deterrence is less certain in a multipolar strategic environment.

Recognizing the dangers and uncertainties in the new world order, President Bush shifted the technical focus of the Strategic Defense Initiative (SDI) program in January 1991 from "detering massive Soviet nuclear strikes to global protection against limited strikes (GPALS)".<sup>9</sup> GPALS has come under attack by some senators who believe the program is too costly [\$35 billion] and technologically unsound.<sup>10</sup> Vice President, Al Gore, opposes early deployment [1997] of GPALS, fearing that it would violate the Anti-Ballistic Missile (ABM) Treaty and delay nuclear arms reductions outlined in the Strategic Arms Reduction Treaties<sup>11</sup> [For years, the Russians have threatened to expand and modernize their nuclear forces if the United States violated the ABM Treaty].

It may take several years to renegotiate the ABM Treaty and field GPALS. Some near-term solutions for our missile defense needs include: the Improved Patriot Anti-Tactical Missile System; the Extended Range Interceptor; and the Theater High-Altitude Defense Interceptor.<sup>12</sup> Collectively, these theater-based systems cost less than GPALS; don't violate the ABM Treaty; and provide our forward deployed forces with

adequate warning and protection against weapons of mass destruction.

As we improve our tactical missile defense capabilities, we can pursue a ban on tactical nuclear weapons. Our conventional strength coupled with improved missile defense systems will deter NBC aggression and protect our forces if deterrence fails.

Many proponents of nuclear deterrence see the future role of tactical nuclear weapons differently. Policy analyst, Keith Payne warns, ". . . conventional forces alone will be inadequate for deterrence. . . The importance of a nuclear component in deterring regional aggression, and particularly the need for nuclear weapons to deter the use of chemical weapons by regional aggressors, may have been demonstrated most recently during the Gulf War".<sup>13</sup> Some defense analysts go further and suggests we expand and modernize our tactical nuclear weapons by making smaller, low-yield nuclear warheads.<sup>14</sup> Strategists who support this type of modernization effort believe tactical nuclear weapons would be more acceptable politically [smaller weapons would cause less collateral damage].

As long as some nations have nuclear weapons, rival states will try to acquire them. Tactical nuclear forces are a vital



deterrent in the near term, but in the long run, an international ban on tactical nuclear weapons will enhance our national security. A strategy based on conventional strength, improved missile defense capabilities, and international consensus is far more effective than a strategy based on nuclear deterrence alone.

## CHAPTER VI

### CONCLUSION

The proliferation of NBC weapons to Third World countries is making the new world order a highly volatile and dangerous place. Regional CINCs need tactical nuclear weapons in the near term to deter NBC aggression and prevent conflict escalation. Once we field a more effective ATMDs, we can provide a higher level of protection to our forward-deployed forces and eliminate our dependence on tactical nuclear weapons for deterrence. A security strategy based on conventional strength and missile defense capabilities will allow us to shift our tactical nuclear weapons policy in the same direction as our policy toward chemical weapons.

We are destroying our chemical arsenal and have no plans to replace these weapons. Future chemical deterrence will be based on our conventional strength; defensive capabilities, and an international ban on chemical weapons. We can pursue the same strategy with our tactical nuclear weapons after we field a better ATMDs. A future ban on tactical nuclear weapons would give us greater political leverage in our efforts to stop nuclear proliferation. Moreover, nuclear disarmament will enhance regional and global security in the long run.

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